

Shelby Kaiser
Assignment 5
Programming Assignment 5
November 8, 2015

Abstract

The purpose of this program is to spell check a document, in this case oliver.txt. This is much like what we did in Programming Assignments two and four except this way it is using a binary tree instead of an ArrayList or a LinkedList. In order to do this we must read the words from the dictionary file and store them into one of twenty-six binary tree based on the first letter of the word. Then we must read the file we wish to spellcheck and compare the words from that document with the ones in the dictionary binary trees. We also want to grab the number of comparisons when we search for words so that we can find the average number of comparisons for the output.

All though the program is similar to what we have done before, it is different in the fact that it takes significantly less time to run than say it would using an ArrayList. This is because binary trees have the property that overtime you travers down a level you are cutting your search pool in half. This allows for searching to occur much quicker. In this case, the binary tree structure takes approximately one eighth of the time that the LinkedList and ArrayList did. This also allowed for the number of comparisons on average to be significantly less.

In close, using a binary tree as a spellchecker has so far been the most successful way of going about it. We were able to see how the comparisons needed is greatly reduced along with the time used to find (or not find) the words spelled correctly in the document Binary trees are so far the most efficient form of spellchecking we've worked with in class.